
Ed-Fi Summit Dashboard Plugins - Featuring NWEA & Dashboard Usage

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Contributors

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Topics of Discussion

- NWEA Map
 - Business case and approach
 - Development approach utilizing plug-in architecture
 - Implementations
- Dashboard Usage
 - Business case and approach
 - Development approach utilizing plug-in architecture
 - Implementations
- Q & A

NWEA MAP Assessment - Business Case

- 2013-14 - Initially targeted implementation in Arkansas
 - Quickly found out that it did not conform to existing metric templates
 - NWEA made it clear that they would not allow an out-of-the-box dashboard representation
- 2014 - Nebraska began working on a customized dashboard representation
 - Added additional datapoints such as statistics, and customized metric layouts
 - Showed to NWEA and they confirmed it was an acceptable representation
- 2015 - Coordinated NWEA data export format (XML file)
 - Multiple parties worked together - NWEA, MSDF, NDE, ADE, & DLP

NWEA MAP on the Dashboard - DEMO

BENCHMARK ASSESSMENTS	RIT SCORE	STANDARD ERROR	PERCENTILE RANK	TREND	DETAILS
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MAP Assessments Performance

Test scores and whether met standard

Language (2016 Spring)	212	3	93.0 %	More ▾
Mathematics (2016 Spring)	201	3	74.0 %	More ▾
Reading (2016 Spring)	214	3	95.0 %	More ▾

MAP Assessments Performance - Reading - MAP Goal Strands

CUSTOMIZE VIEW

GOAL STRANDS ^	Winter (11/30/15)	Spring (05/6/16)
Informational Text2	★	★
Literature 1	●	★
Vocabulary Acquisition and Use3	●	★

|<< Page 1 of 1 >>| Rows per page: 10 20 50 100 Total rows: 3
 CS: ★ Hi: %ile > 66 ● Avg: %ile 33 - 66 ■ Lo: %ile < 33
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NWEA MAP - Technical Challenge

- It was known that multiple states utilize NWEA MAP and would be interested in displaying on the Ed-Fi Dashboards
- Shortcomings of using traditional approach of developing as extensions
 - Is this feature going to Core? If not how do we share across projects?
 - Custom extension sharing not always easy (Copy, paste and make a lot of changes)
- Objective: Utilize a technical approach that is more highly transferrable among implementations with minimal amount of customization/rework
 - Helps to satisfy NWEA desire to display their data in a specific way

NWEA MAP - What is a Plugin?

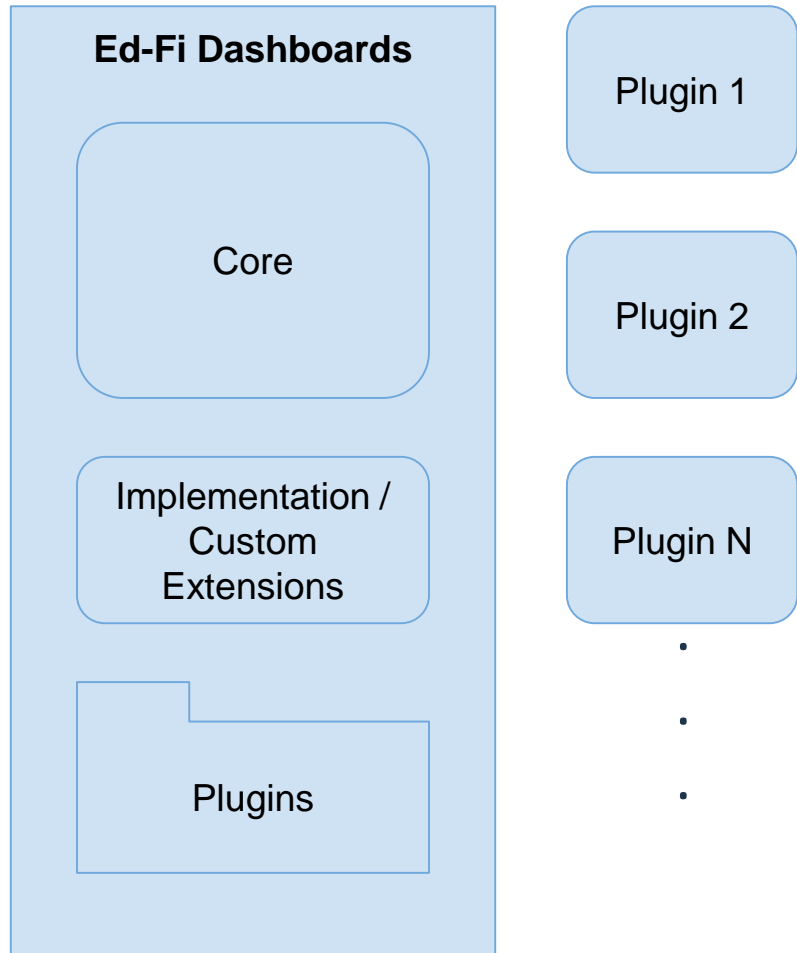
- Background

- The plugin architecture was developed by DLP (funded by MSDF for work done for Pennsylvania) in 2013 for the “Early Warning System and Intervention Catalog” (EWS and IC)
- Why? We knew EWS and IC were going to be shared across multiple implementations.
- Thanks to many implementations, challenges and constant contributions from the community we believe it is mature and stable.

- But what is a plugin?

- It is not rocket science! It is only an extension. A plugin is a Dashboard Extension that is simply packaged separately and that is easier to share.
- When developing a plugin you have access to all the core components like Repositories and Services just like if you were creating a custom dashboard extension.

How Plugins Work



- Plugins are developed in a separate folder or repository.
- Once developed they have to be dropped in the “*EdFi.Dashboards.Presentation.Web/Plugins*” folder.
- The plugin architecture scans the folder and picks up the assemblies and loads them in the dashboard.

DLP created a end to end example that is available in Ed-Fi’s Tech Exchange

<https://github.com/Ed-Fi-Technology-Exchange/Ed-Fi-Plugins/tree/master/Plugins/0-SamplePlugin>

Benefits of the Plugin Architecture

- Main benefit is sharing amazing features with everyone in the community!
- Reduced cost/effort to integrate into existing implementations
- Enables cafeteria-style sharing

NWEA MAP - Developing the Plugin - Nebraska

- DLP developed plugin in NDE's environment
 - Timeline - 2014-2015
 - Approach
 - Coordinated requirements development with Nebraska pilot school districts (mockups, logic)
 - Developed custom Ed-Fi v1.3 dashboard pages for NWEA MAP assessment
 - Developed Mapforce interface for loading district supplied NWEA flat files for Ed-Fi 1.2 ODS and 2.0 ODS
 - Coordinated XML output file types with NWEA and Ed-Fi Alliance
 - Key challenges
 - Developing interfaces to load district NWEA MAP files with minor differences in data/format
 - Coordinating approvals and contracts for NWEA to create a single statewide file to load in care of all districts
 - Decision to move away from district to statewide files has delayed Production support

NWEA MAP - Implementing the Plugin - ADE

- First developed in NDE, but was not immediately implemented in Production due to timeline of data sharing agreements
- Once Plugin was made available via the EdFi Alliance's Tech Exchange, DLP integrated into ADE's environment. (<https://exchange.ed-fi.org/>)
 - Timeline
 - Development began in February 2015 when plugin was available
 - Dashboard visualizations available in March 2015
 - Key challenges
 - Needed to convert xml files to 1.2 ODS upon receipt
 - Approach
 - Download the plugin from the exchange
 - Evaluate the scope, features and customizations (if any)
 - Ensure data exists and integrate it end to end
 - Integrate plugin and ensure operation

NWEA MAP - Implementing the Plugin -Delaware

- DLP integrated into DOE's environment

- Timeline

- Initial work planning and development work in May 2016
 - Pause to allow end of year rollover
 - Implementation in October 2016

- Approach

- Imported plugin from Alliance

- Key challenges

- Importing metrics DB metrics (specific metric ID's)
 - DOE on 1.2 required conversion of xml to 1.2 ODS but then loaded into iMart
 - DOE using an older version of Ed-Fi grid; required additional work to customize layout

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- Dashboard Usage

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- Q & A

Dashboard Usage - Business Case

- Several parties determined a need for tracking usage of dashboards
 - Ed-Fi Alliance & MSDF - wanted a way to show proof of user activity in Dashboards
 - ADE - wanted a way to show uptake of Dashboards as return on investment - both overall usage and usage of particular extensions/additional development
- Out-of-the-box toolsets did not suffice
- Goals of MSDF / Ed-Fi Alliance
 - Develop a usage tracking module for the Ed-Fi dashboards
 - Provide the ability to capture and report on key metrics surrounding the usage of the dashboards by teachers, principals, superintendents, and other administrators
 - Develop for reusability by other state and local education agencies currently using the Ed-Fi dashboards

Usage Metrics

- Logins – Total number of unique logins to the dashboard
- Consistency - % of weeks with at least one login
- Session Time – Total amount of time logged into the system
- Page Views – Total number of unique page views accessed
- Page Actions – Total number of unique actions called
- Administrative Actions – Total count of administrative actions
- Active Users – Total number of Active users in the school
- Uptake – Active users / Potential users within the school

Key Functionality - Demo

Data Filters

Time: Year (Jul 1, 2015 - Jun 30, 2016) Role: All Level: BERGMAN SCHOOL DISTRICT UPDATE FILTERS

Metric Tiles

Logins 254 Consistency 81% Session Time 6:14

User Lists

Active User List Back to the Top

Active Filters - Time: Year (Jul 1, 2015 - Jun 30, 2016) Role: All

Show 10 entries Search:

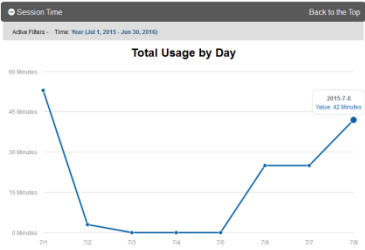
Name	Logins	Consistency	Session Time	Page Views	Page Actions
Lamar Matthews	2	50%	0H 21M	14	5
Dustin Hampton	1	50%	0H 0M	10	4
Claire Shelton	14	100%	2H 25M	102	3
Monique Arnold	7	100%	1H 7M	45	17

Showing 1 to 4 of 4 entries Previous 1 Next

Export

EXPORT ARTIFACT EXPORT CSV

Data Drilldowns



Dashboard Usage - Developing the Plugin - ADE

- Timeline
 - Jan - Oct 2015
- Key elements
 - Stakeholder sessions to identify key reporting needs and refine technical design
 - Development effort that pushed limits of dashboard look & feel without abandoning it
 - QA & load testing (performance testing)
- Key challenges
 - Integrating new databases
 - Mapping pages that are not 'free'

Stakeholder sessions

State educator webinar
(3)



District & School
Admin webinar
(70)



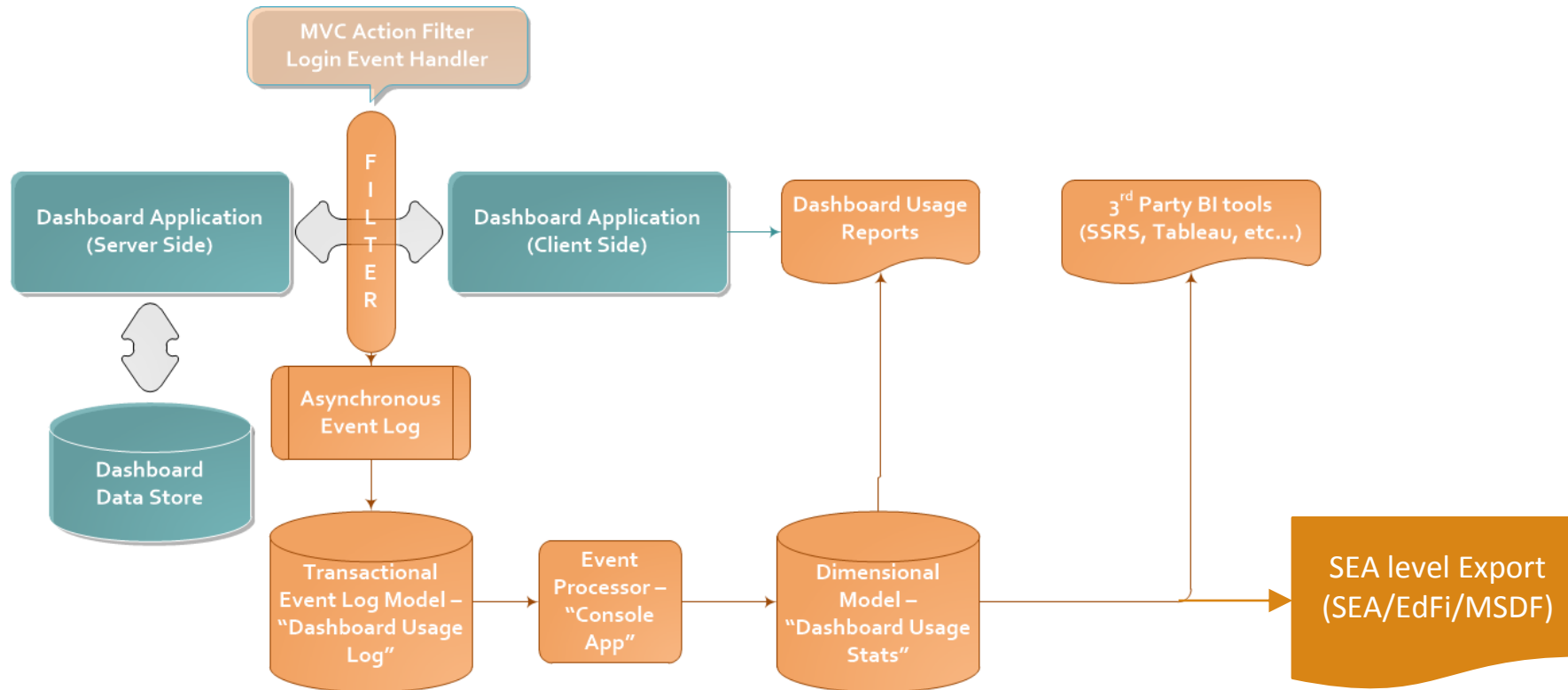
Teacher webinar (60)



Verbal feedback during sessions
plus survey responses from 69
participants:

- 18 Teachers
- 11 Principals/Assistant Principals
- 2 Curriculum Directors
- 5 Assessment Directors
- 11 Instructional Facilitators
- 1 Technology Coordinator
- 1 Superintendent
- 4 ADE Staff

Dashboard Usage - System Architecture



Event Log Data Capture

- MVC Action Filter set up to capture events
- Log includes these and additional data elements:
 - EventId (Unique Identifier for the event.)
 - SessionId
 - User ID and/or StaffUSI of current user.
 - Date and Time Accessed Resource
 - IpAddress
 - User role
 - ResourceName (Name of the endpoint)
 - ResourceUrl (The whole URL that was accessed including query string)
 - HttpVerb (Get, Put, Post, Delete)
- Many page views and actions are 'free' but many require custom mapping

Dashboard Usage - Implementing in Delaware

- Timeline
 - February-March 2016
- Key elements
 - Extensive work to identify Delaware-specific pages and actions (extensions) that were not free and needed to be mapped
 - Correctly identifying staff role relationships and pairing to proper usage (especially for users with multi-school/district relationships)

Q&A

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NWEA considers these critical to display

Strand scores for all test administrations shown in chronological order; RIT shows on tool tip

Two test types: web-based and client server; each has its own cut scores

NWEA MAP on the Dashboard

BENCHMARK ASSESSMENTS	METRIC VALUE (% of students)	TREND	SCHOOL GOAL	DIFFERENCE FROM GOAL	STUDENT ATTAINMENT (# meeting student goal)	DETAILS
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MAP Assessments Performance

% of students who met standard

Language (2016 Winter)	62.7 %		75.0 %	-12.3 %	69 of 110	More ▾
Mathematics (2016 Winter)	69.1 %		75.0 %	-5.9 %	226 of 327	More ▾
Reading (2016 Winter)	68.8 %		75.0 %	-6.2 %	225 of 327	More ▾

MAP Assessment Performance - Reading - Student List

↓ CUSTOMIZE VIEW

STUDENT ^	GRADE LEVEL	MATHEMATICS	MAP Language	MAP Mathematics	MAP Reading	MAP Science	MAP Primary Math
[REDACTED]	2nd	0.1		1.0 %	10.0 %		
[REDACTED]	3rd	0.01	2.0 %	1.0 %	1.0 %		
[REDACTED]	1st	0.21		19.0 %	21.0 %		

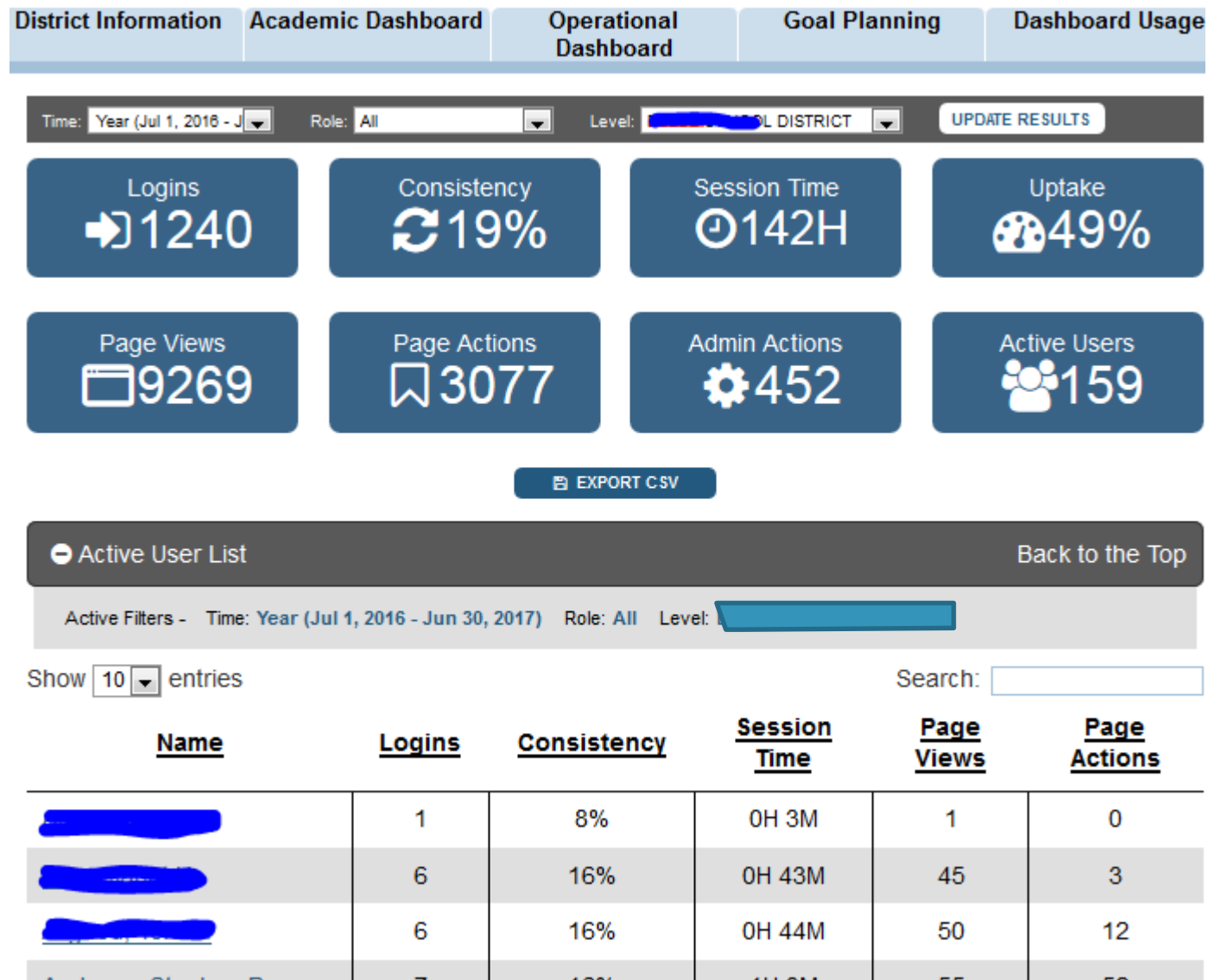
NWEA MAP on the Dashboard

STUDENT ^	GRADE LEVEL	LEARNING STANDARD PERFORMANCE	FOUNDATIONAL SKILLS1	LANGUAGE AND WRITING2	LITERATURE AND INFORMATIONAL3	VOCAL USE AND FUN
# Students Mastering Objective			5 of 19	9 of 19	8 of 19	6 of 19
[Redacted]	2nd	.1000				
[Redacted]	2nd	.8400				
[Redacted]	2nd	.7000				
[Redacted]	2nd	.4300				
[Redacted]	2nd					
[Redacted]	2nd	.9600				
[Redacted]	2nd	.8600				

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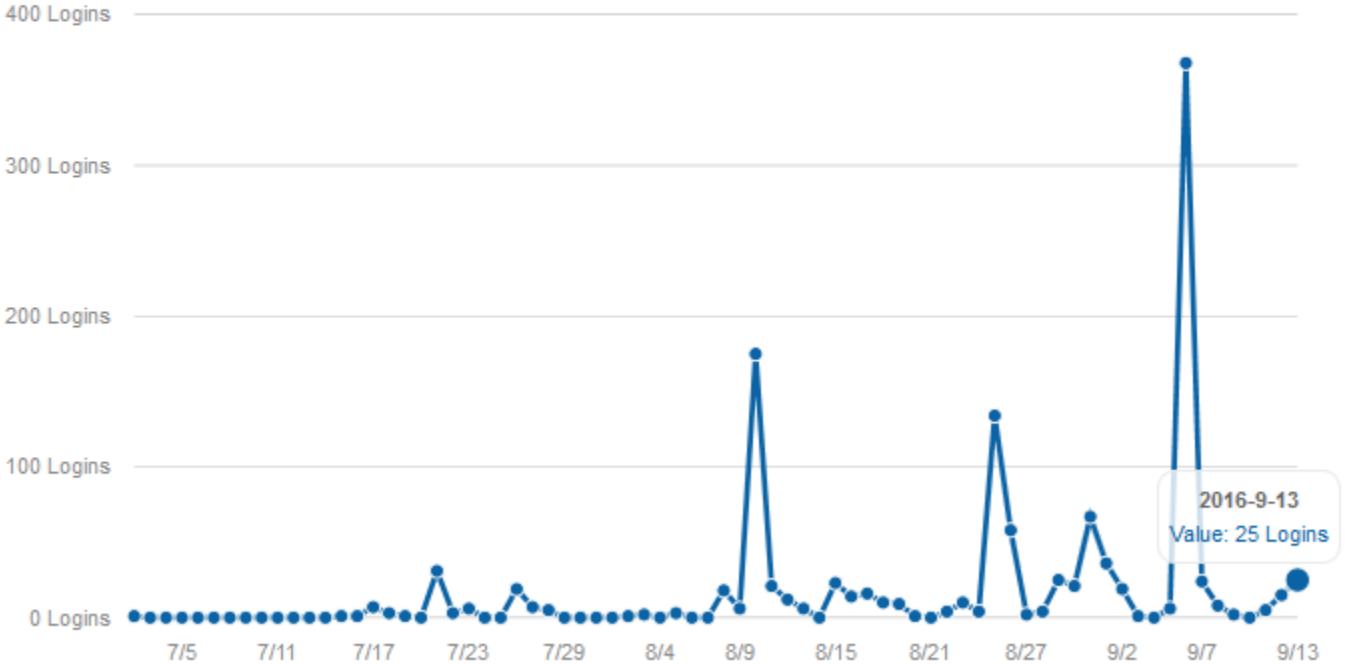


Dashboard Usage on the Dashboard

☰ Logins and Consistency Back to the Top

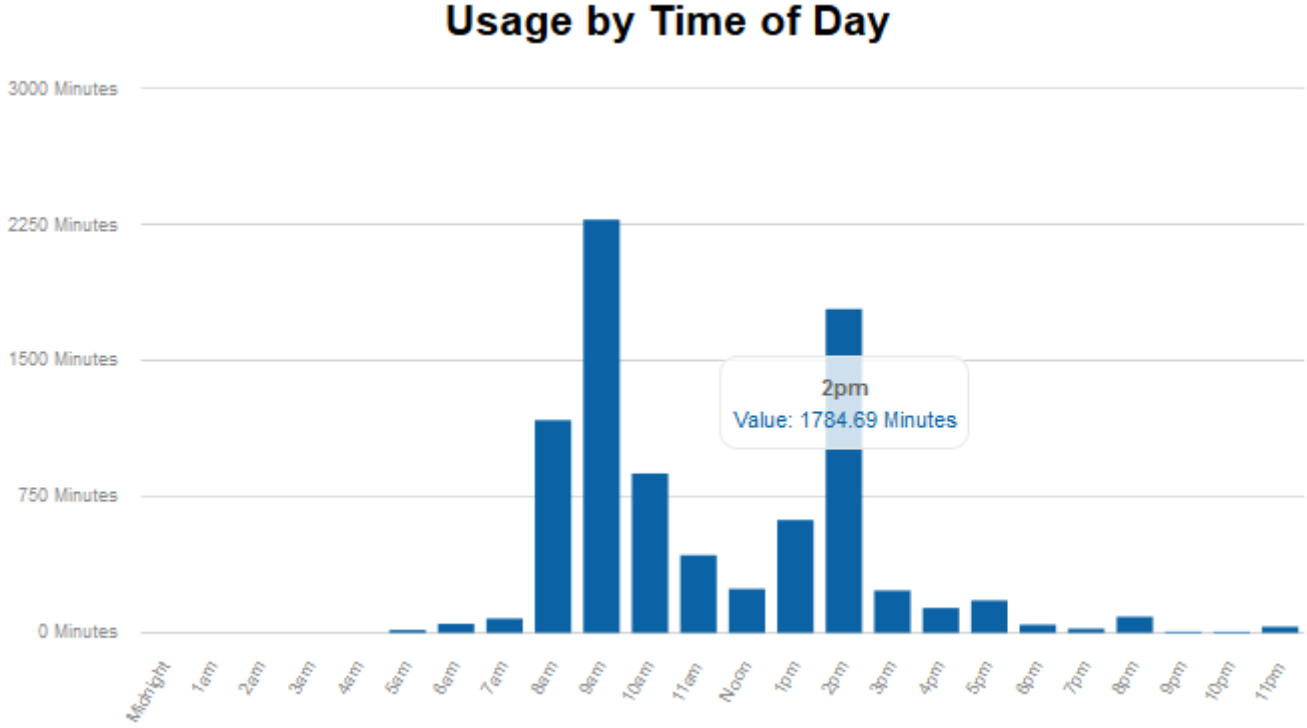
Active Filters - Time: Year (Jul 1, 2016 - Jun 30, 2017) Role: All Level:

Total Logins by Day



Definitions

Dashboard Usage on the Dashboard

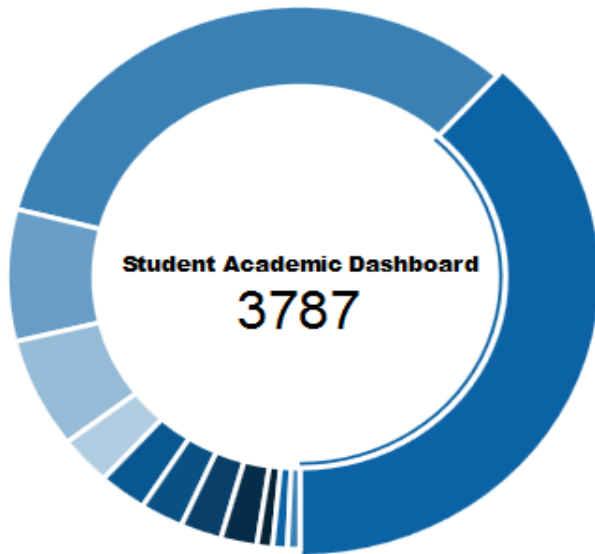


Dashboard Usage on the Dashboard

Page Views Back to the Top

Active Filters - Time: Year (Jul 1, 2016 - Jun 30, 2017) Role: All Level: [Filter]

9269 Total Page Views Reset

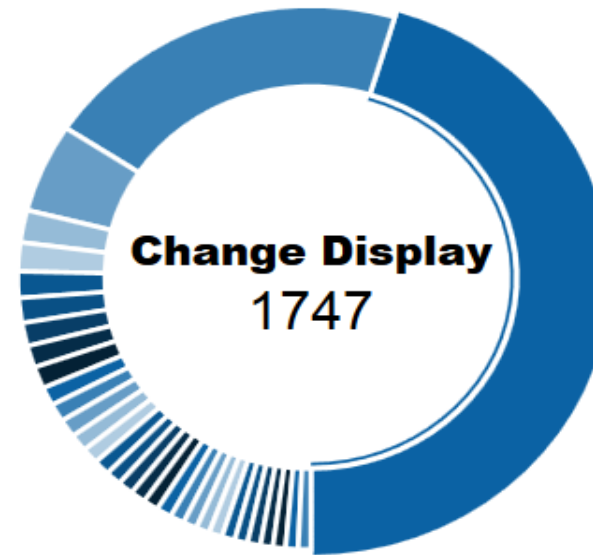


Page	Percent	Number
<i>Student Academic Dashboard</i>	41%	3787
<i>State Assessments Overview</i>	18%	1625
<i>Attendance & Discipline</i>	15%	1408
<i>Grades & Credits</i>	2%	227
<i>College & Career Readiness</i>	2%	201
<i>Local Assessments</i>	1%	127
<i>Interventions</i>	1%	110
<i>Advanced Academics</i>	1%	64
<i>Advanced Academics</i>	0%	25
<i>Student List</i>	35%	3226
<i>School Information</i>	8%	724
<i>School Academic Dashboard</i>	6%	595
<i>Classroom View</i>	2%	228
<i>Dashboard Usage</i>	2%	201
<i>Student Transcript</i>	2%	174
<i>Student Information</i>	2%	163
<i>Local Assessment Upload</i>	1%	135

Page Actions Back to the Top

Active Filters - Time: Year (Jul 1, 2016 - Jun 30, 2017) Role: All Level: [Filter]

3077 Total Page Actions Reset



Page	Percent	Number
<i>Change Display</i>	57%	1747
<i>Assessment Strands</i>	25%	795
<i>Modify metrics based watch list</i>	6%	185
<i>Historical Chart</i>	2%	61
<i>Save Local Assessment</i>	2%	61
<i>Export</i>	1%	31
<i>ACT Scores</i>	1%	31
<i>Student List</i>	1%	31
<i>Subclaims</i>	1%	31
<i>Test Measures</i>	1%	31
<i>Infractions Log</i>	1%	31
<i>Calendar</i>	1%	31
<i>ACT Aspire Scores</i>	1%	31
<i>Courses List</i>	0%	0
<i>Days Absent List</i>	0%	0
<i>Historical Performance</i>	0%	0
<i>Learning Standard Objectives</i>	0%	0
<i>Create or Add Watch List</i>	0%	0